

Application No. 10/816,007

Response to Office Action of September 9, 2005

REMARKS

In the Office Action of September 9, 2005, claims 1-25 stand rejected. In this response claims 8, 16, and 21 have been amended to correct typographical errors and to clarify the claims and not for reasons of patentability. Reconsideration and allowance of all pending claims are respectfully requested in view of the following remarks. No new subject matter is being added by this response.

I. REJECTION UNDER 35 U.S.C. §103

To establish a prima facie case of obviousness under 35 U.S.C. § 103, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Third, the cited prior art reference must teach or suggest all of the claim limitations. Furthermore, the suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based upon the Applicants' disclosure. A failure to meet any one of these criteria is a failure to establish a prima facie case of obviousness. MPEP §2143.

Claims 1-25 stand rejected under 35 U.S.C. § 103(a) as unpatentable over *Davis* in view of *Jones* and/or *Kawamata*. The Examiner argues that *Davis* discloses a damper and isolator except for a discussion of effective fluid mass and using the effective fluid mass as a tunable parameter and the adjustment of the passages to tune the damper. The Examiner argues that the tuning of fluid mounts is well known. Also, the Examiner argues that *Jones* and *Kawamata* teach a fluid inertial effect.

A. THE EXAMINER HAS FAILED TO EXAMINE THE CLAIMED INVENTION AS A WHOLE

Before specifically addressing the merits of the rejections as they apply to the claims in the presented invention, the Applicant notes that in this Office Action, as well as the previous Office Actions of record, the Examiner simply groups all claims and attempts to reject them based on the "gist" of the claim. Indeed, in the Office Action of September 9, 2005, the

Application No. 10/816,007

Response to Office Action of September 9, 2005

Examiner attempts to summarize the "gist" of the Applicants invention by referring to sections of the specification and not the claim. The Examiner then indicates how the art of record applies to the "gist" of the invention. The Examiner does not in this action, or in any of the previous actions, address the claimed invention as a whole, despite the requirement to do so under section 2141.02 of the MPEP. Instead, the Examiner has repeatedly (and evidently admittedly) reduced the invention to its alleged "gist" and applied the prior art to what the Examiner believes the "gist" to be, and ignored the Applicant's repeated arguments regarding their individual allowability over the prior art of record. The Applicant respectfully requests the following Office Action be either an allowance or an examination of the invention as a whole.

**B. THE EXAMINER'S PRIOR ART COMBINATION IS BASED ON
HINDSIGHT RECONSTRUCTION**

The Examiner's combination of the art is based on hindsight reconstruction and therefore should be withdrawn. This is because there is no disclosure, teaching, or suggestion in *Davis* to add either *Jones* or *Kawamata*. The argument of the Examiner is that it would be obvious to adjust one of the well known variable parameters in the device of *Davis* to achieve a damper that uses fluid inertia. While it may be desirable to make such a change, mere desirability is not sufficient to establish obviousness. *Davis* must teach or suggest the proposed combination. However, there is no teaching or suggestion in *Davis* to add a fourth tunable parameter. Indeed, *Davis* attempts to minimize damping effects beyond those of the first three parameters. As disclosed by *Davis* "the resistance to flow through the secondary fluid path is made small as compared to the primary damping annulus to minimize damping by such secondary fluid path." (column 7, lines 1-5 of *Davis*). In addition, there is no recognition in *Davis* that a fourth parameter can be derived from the system of *Davis*, especially a fourth parameter that uses the fluid in the annular damping region. *Davis* notes that the usefulness of this region is to provide the damper parameter C_A . Neither *Jones* or *Kawamata* discloses, teaches, or suggests for the tunable parameter as disclosed in the present invention. Indeed, *Jones* and *Kawamata* are cited for the proposition that it is well known to vary parameters of fluid mounts and dampeners by adjusting cross sectional areas of fluid paths and pistons. However, the argument not being addressed by the Examiner is that while *Jones* and *Kawamata* teach the well-known fact that parameters in dampeners can be adjusted, they don't teach which parameters need to be adjusted.

Application No. 10/816,007

Response to Office Action of September 9, 2005

Since *Davis* fails to disclose, teach or suggest a fourth tunable parameter, there are no "well-known" parameters of *Davis* that can be simply adjusted to yield an effective four parameter dampener absent the teachings of the present invention. The addition of *Jones* and *Kawamata* may teach the adjustment of parameters disclosed in *Davis* that may or may not be beneficial; i.e., they teach it might be obvious to try adjustments, an illegitimate basis for an obviousness rejection. Without a disclosure, teaching, or suggestion to make the proposed combination, the rejections based on the combinations must be withdrawn.

C. INDEPENDENT CLAIM 1 AND ITS DEPENDENT CLAIMS ARE ALLOWABLE

Claim 1, recites, in part, "wherein the ratio of the cross sectional area of the first fluid containment chamber and the second fluid containment chamber to the cross sectional area of the annular damping path is chosen to produce an effective mass of the fluid to enhance vibration damping and isolation." As the Examiner points out, this limitation is not found in *Davis*. The addition of *Jones* fails to disclose, teach, or suggest an effective mass. A fluid "slug" is simply an amount of fluid in part of *Jones*. Additionally, nowhere in *Jones* is the ratio of the cross sectional area of a first and second fluid containment chamber and the annular damping path disclosed. For at least these reasons, the *Davis/Jones* combination fails to render claim 1 obvious. While *Jones* may teach adjusting known parameters, such as those disclosed in *Jones*, *Jones* does not disclose, teach, or suggest the adjustment of the parameters as in the present invention.

Kawamata does mention the determination of an effective fluid mass. However, in *Kawamata* the fluid mass is caused by a discharge tube that feeds two fluid containers. Thus, *Kawamata* does not show a damping system "wherein the ratio of the cross sectional area of the first fluid containment chamber and the second fluid containment chamber to the cross sectional area of the annular damping path is chosen to produce an effective mass of the fluid to enhance vibration damping and isolation."

In order to render claim 1 obvious, it is not enough for the prior art to disclose terms such as "fluid mass" or "fluid slug" or that certain parameters in a damping system can be adjusted to tune performance. Indeed, the adjustment of parameters in a damping system is known. Instead, as discussed previously, all claim limitations must be taught or suggested, including the

Application No. 10/816,007

Response to Office Action of September 9, 2005

parameters that are adjusted. A prima facie case for a section 103 rejection can not be made by simply arguing that art generically teaches the adjustment of parameters. The prior art combination must show all claim limitations including a showing that the parameters being adjusted to enhance damping and isolation is the chosen ratio "of the cross-sectional area of the first fluid containment chamber and the cross-sectional area of the second fluid containment chamber to the cross sectional area of the annular damping path."

For at least these reasons, claim 1 is in condition for allowance.

Considering claim 2, neither the *Davis/Jones* combination nor the *Davis/Kawamata* combination discloses, teaches or suggests "whenever the cross sectional area of the damping path can be changed to permit active tuning of the effective mass of the fluid." For at least this reason, claim 2 is in condition for allowance. This argument has never been specifically responded to by the Examiner.

Considering claim 3, neither the *Davis/Jones* combination or the *Davis/Kawamata* combination discloses, teaches or suggests "wherein the cross sectional area of the first fluid containment chamber or the second fluid containment chamber can be varied to permit active tuning of the effective mass of the fluid." For at least this reason, claim 3 is in condition for allowance. This argument has never been specifically responded to by the Examiner.

Considering claim 5, neither the *Davis/Jones* combination nor the *Davis/Kawamata* combination discloses, teaches or suggests, "wherein the true mass of the fluid is less than the mass of the payload and the effective mass of the fluid is greater than or equal to the mass of the payload". None of the cited references, either alone or in combination, disclose, teach or suggest basing the effective mass on the payload mass. And yet this argument has never been independently responded to by the Examiner. For at least this reason, claim 5 is in condition for allowance.

Considering claim 6, neither the *Davis/Jones* combination nor the *Davis/Kawamata* combination discloses, teaches, or suggests, "wherein the effective fluid mass of the fluid is chosen to give the apparatus a roll-off of -60dB per decade for at least one decade after a significant resonance." *Jones* and *Kawamata* do not disclose a roll off. In *Davis*, the roll off for a three parameter system is about -40dB per decade. This can be observed in Fig. 1C of *Davis*. In Fig. 1C, line 210 is a line for a three parameter system. At 10 Hz the transmissibility is a little more than about -30 dB. At 100 Hz the transmissibility is about -70 dB. Thus, for one decade

Application No. 10/816,007

Response to Office Action of September 9, 2005

(10^1 to 10^2 Hz), the change in the transmissibility, or roll-off, is -40 dB. For at least this reason, claim 6 is in condition for allowance. Once again, this argument has never been addressed by the Examiner, even though the arguments have been reiterated by the Applicant on more than one occasion.

Claims 2-7 depend from allowable claim 1. Therefore, claims 2-7 are in condition for allowance.

D. INDEPENDENT CLAIM 8 AND ITS DEPENDENT CLAIMS ARE ALLOWABLE

Considering independent claim 8, as discussed in conjunction with claim 1, neither the *Davis/Jones* combination or the *Davis/Kawamata* combination discloses, teaches or suggests an "isolator comprising four tunable parameters." Further, the proposed combination fails to disclose, teach or suggest that one of the tunable parameters comprises "an effective fluid mass, the effective fluid mass based on a ratio of a cross sectional area of a first fluid containment chamber and a second fluid containment chamber to a cross sectional area of an annular damping path." For at least these reasons, claim 8 is in condition for allowance.

Considering claim 10, neither the *Davis/Jones* combination nor the *Davis/Kawamata* combination discloses, teaches or suggests, "wherein the true fluid mass is less than a mass of a payload coupled to the isolator and the effective mass is equal to or greater than the mass of the payload." None of the cited references disclose basing the effective mass on the mass of a payload. For at least this reason, claim 10 is in condition for allowance.

Considering claim 15, neither the *Davis/Jones* combination nor the *Davis/Kawamata* combination discloses, teaches, or suggests, "wherein the effective fluid mass of the fluid is chosen to provide a roll-off of -60dB per decade for at least one decade after a significant resonance." As discussed in conjunction with claim 6, *Jones* and *Kawamata* do not disclose a roll off. In *Davis*, the roll off for a three parameter system is about -40 dB per decade. Thus, claim 15 is in condition for allowance.

Claims 9-15 depend from allowable claim 8. For at least this reason, claims 9-15 are in condition for allowance.

Application No. 10/816,007

Response to Office Action of September 9, 2005

E. INDEPENDENT CLAIM 16 AND ITS DEPENDENT CLAIMS ARE ALLOWABLE

Independent claim 16, as amended, recites, in part, "a fourth parameter comprising the ratio of a cross sectional area of the primary-isolation means to a cross sectional area of the damping path, the ratio chosen to provide a fluid mass effect, the fluid mass effect determined by an effective mass of the fluid, the effective mass of the fluid greater than a true fluid mass." This is similar to the limitation discussed previously in conjunction with claim 1 and claim 8. As the Examiner points out, *Davis* does not disclose a fourth parameter. *Jones* and *Kawamata* merely disclose tuning known parameters and not tuning the specific parameters as in claim 16.

Considering claim 18, neither the *Davis/Jones* combination nor the *Davis/Kawamata* combination discloses, teaches or suggests "wherein the cross sectional area of the damping path can be changed to permit active tuning of the fluid mass effect." This limitation was discussed earlier in conjunction with claim 3. For at least this reason, claim 18 is in condition for allowance.

Considering claim 19, neither the *Davis/Jones* combination nor the *Davis/Kawamata* combination discloses, teaches, or suggests, "wherein the fluid mass effect is chosen to give the apparatus a roll-off of -60dB per decade for at least one decade after a significant resonance." *Jones* and *Kawamata* do not disclose a roll off. In *Davis*, the roll off for a three parameter system is about -40dB per decade. This was discussed previously in conjunction with claim 6. For at least this reason, claim 19 is in condition for allowance.

Claims 17-20 depend from allowable claim 16. For at least this reason, claims 17-20 are in condition for allowance.

F. INDEPENDENT CLAIM 21 AND ITS DEPENDENT CLAIMS ARE ALLOWABLE

Considering claim 21, neither the *Davis/Jones* combination nor the *Davis/Kawamata* combination discloses, teaches, or suggests, "a plurality of isolation struts comprising four tunable parameters." *Davis* discloses only three tunable parameters and neither *Jones* nor *Kawamata* disclose additional tunable parameters. Additionally, neither the *Davis/Jones* combination nor the *Davis/Kawamata* combination discloses teaches or suggests "an effective fluid mass, the effective fluid mass based on a ratio of a cross sectional area of a first fluid

Application No. 10/816,007

Response to Office Action of September 9, 2005

containment chamber and a second fluid containment chamber to a cross sectional area of an annular damping path." For at least these reasons, claim 21 is in condition for allowance.

Claims 22-25 depend from allowable claim 21. For at least this reason, claims 22-25 are in condition for allowance.

The allowability of these claims, especially the dependant claims have been argued since the first Office Action. However, the Examiner has never responded specifically to these arguments. Instead, the Examiner continues to makes the broad statement regarding the patentability. This omnibus type of rejection leaves the Applicant without any guidance as how to proceed in prosecuting the examination. In order to advance the prosecution of the present invention, the Applicant requests examination of all pending claims.

Application No. 10/816,007
Response to Office Action of September 9, 2005

III. CONCLUSION

For the foregoing reasons, the present application is believed to be in condition for allowance and favorable action is respectfully requested. The Examiner is invited to telephone the undersigned at the telephone number listed below if it would in any way advance prosecution of this case.

Respectfully submitted,
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Dated: December 9, 2005

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